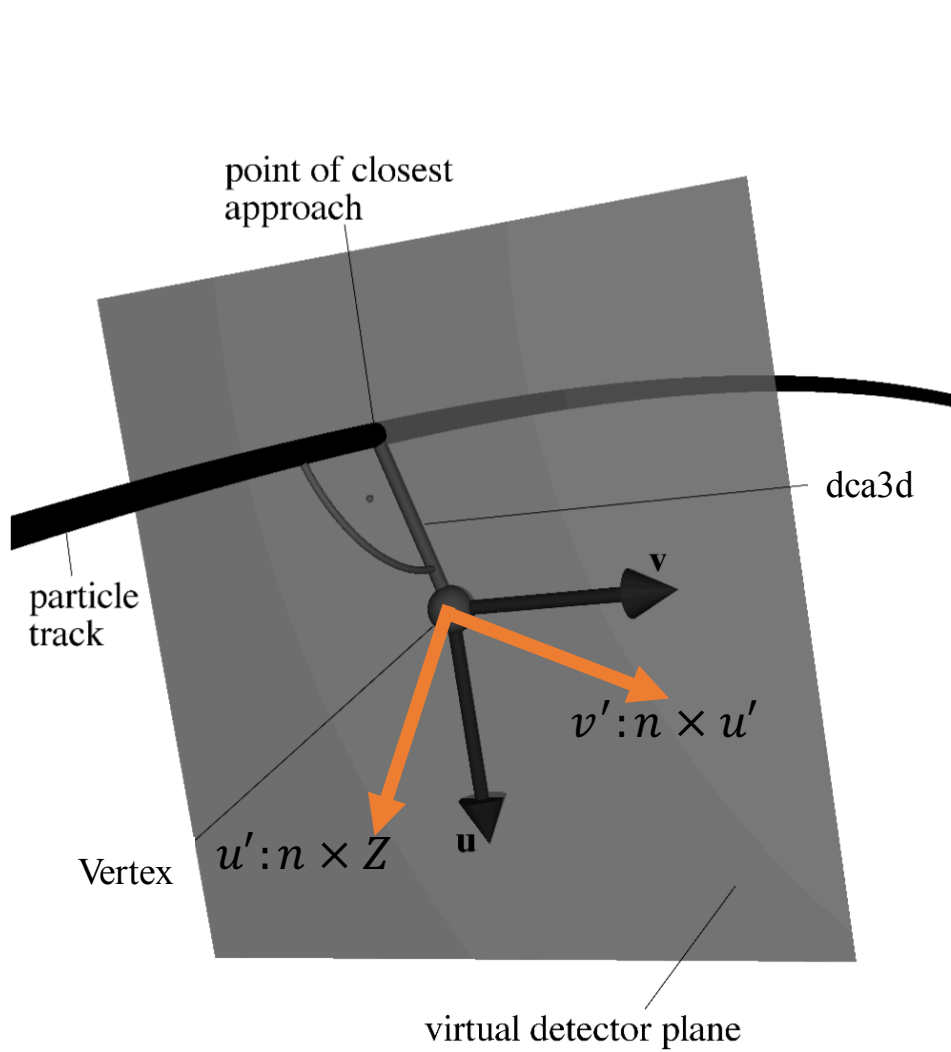


DCA3d

Jin Huang(BNL), Haiwang Yu (NMSU)

New dca3d decomposition

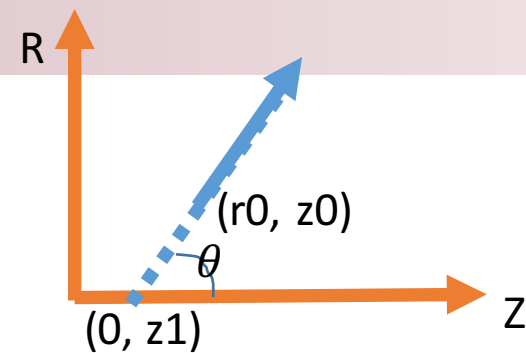


position vector:			
	0		
0	-0.0005005		
1	-0.0003524		
2	0		
}			
uvn			
position cov:			
	0	1	2
0	5.882e-07	1.032e-08	0
1	1.032e-08	8.734e-07	0
2	0	0	0
}			
u'v'n			
position vector:			
	0		
0	0.0003705		
1	-0.0004872		
2	0		
}			
u'v'n			
position cov:			
	0	1	2
0	8.737e-07	1.696e-10	0
1	1.696e-10	5.878e-07	0
2	0	0	0
}			
u'v'n			

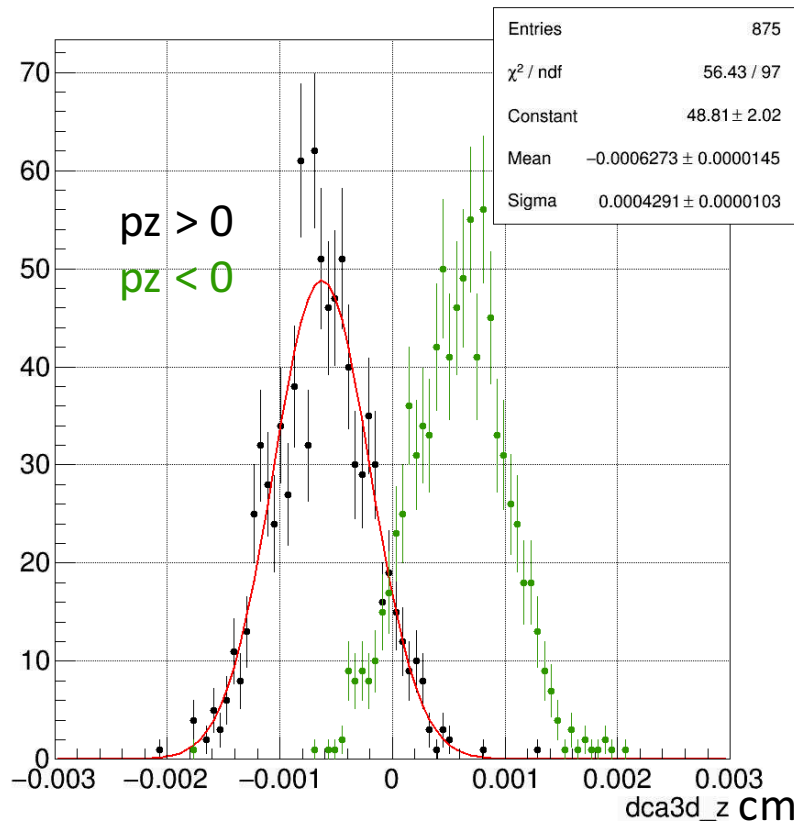
dca3d_z double peak structure

40 GeV muon.

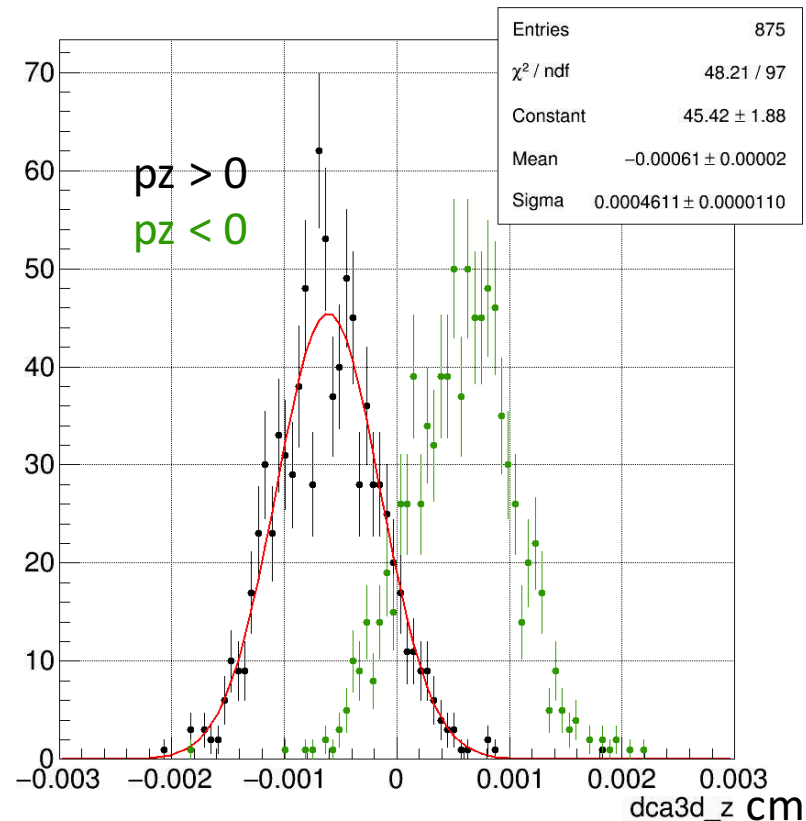
$\eta(-0.5,0.5)$, $\phi(-\pi,\pi)$, vtx(-0.1,0.1)cm



Cylindrical MAPS + TPC
dca3d_z (GenFit Extrapolation)



Cylindrical MAPS + TPC
dca3d_z (Straightline)



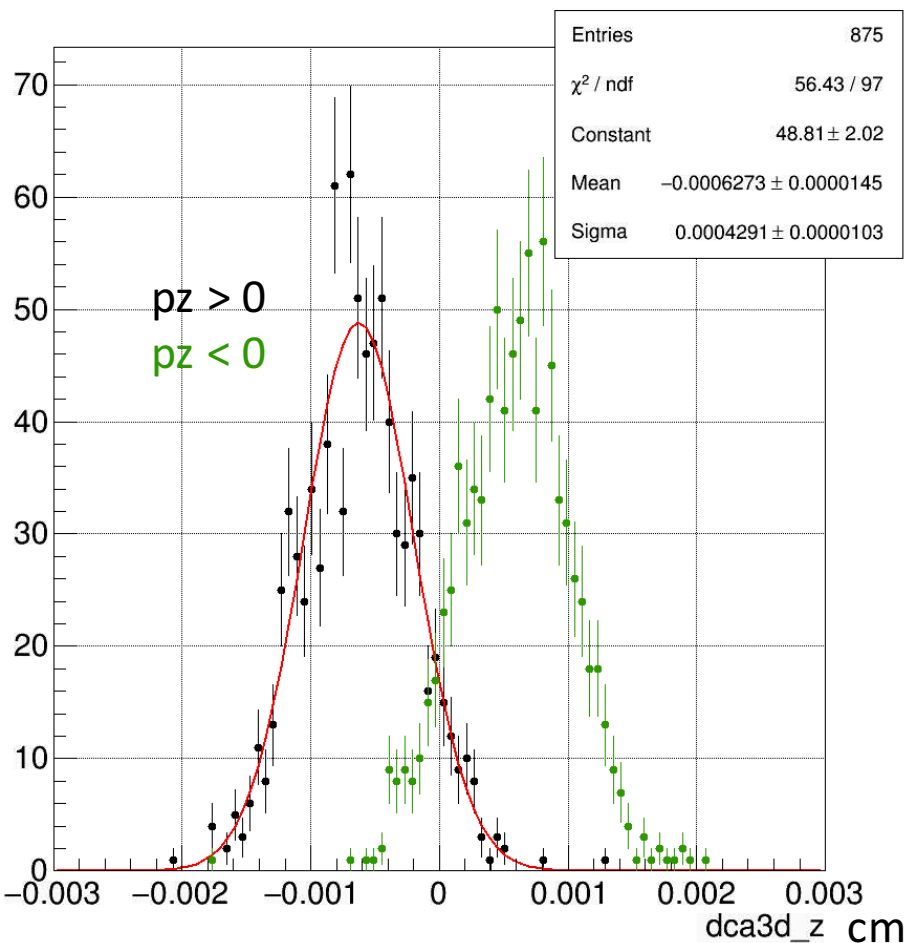
Debugging using Truth Tracking

Cylindrical MAPS + TPC:

MAPS: 12 micron for both ϕ and z resolution

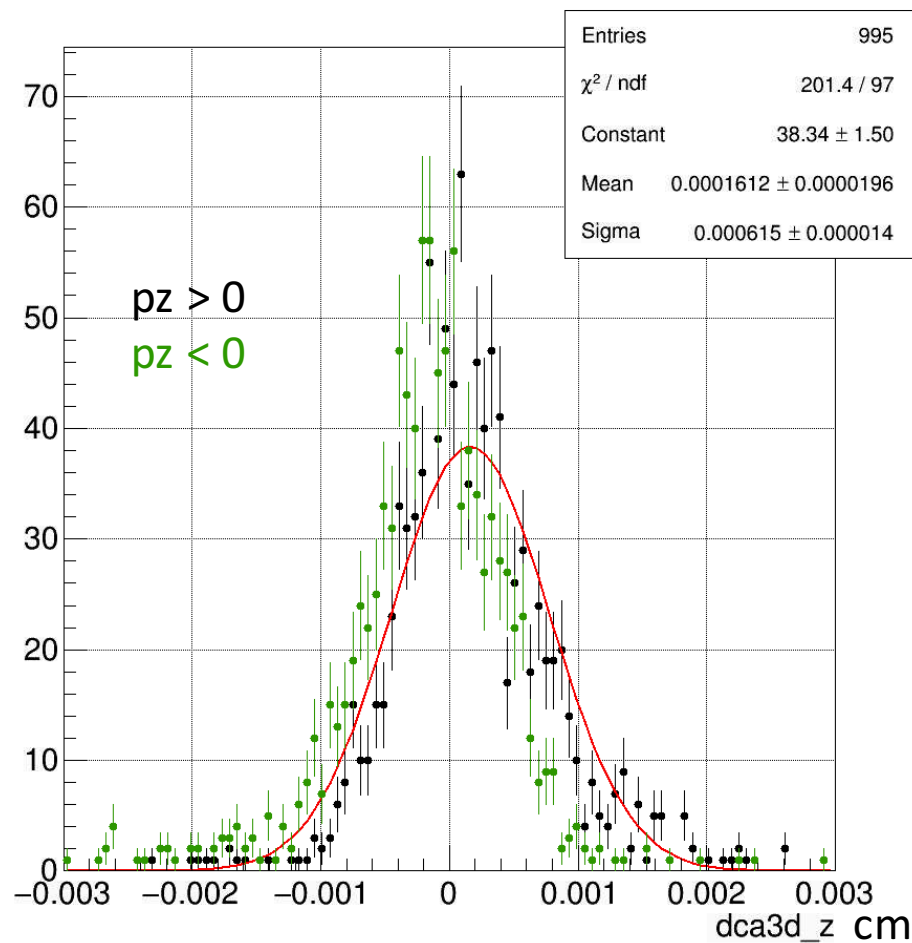
TPC: 0.011 at $r\phi$ direction, 0.03 cm at z direction

dca3d_z (GenFit Extrapolation)



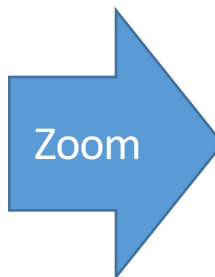
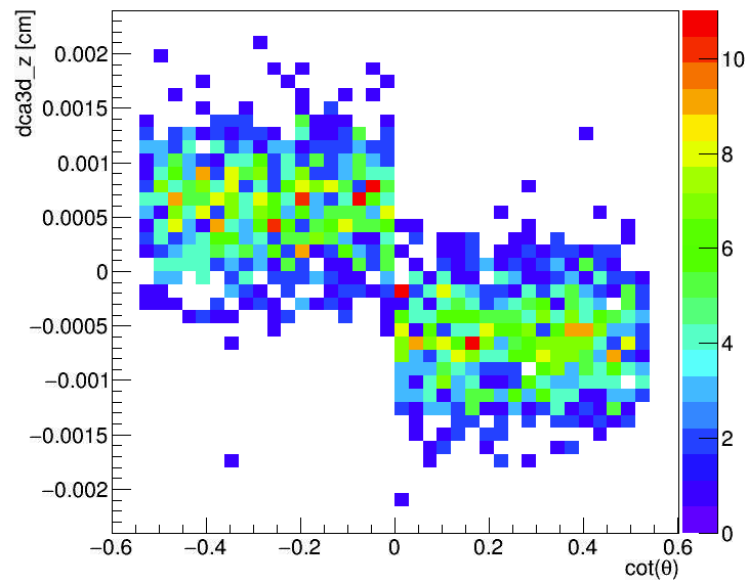
Truth Tracking 20 micron ϕ and z resolution

dca3d_z (Straightline)

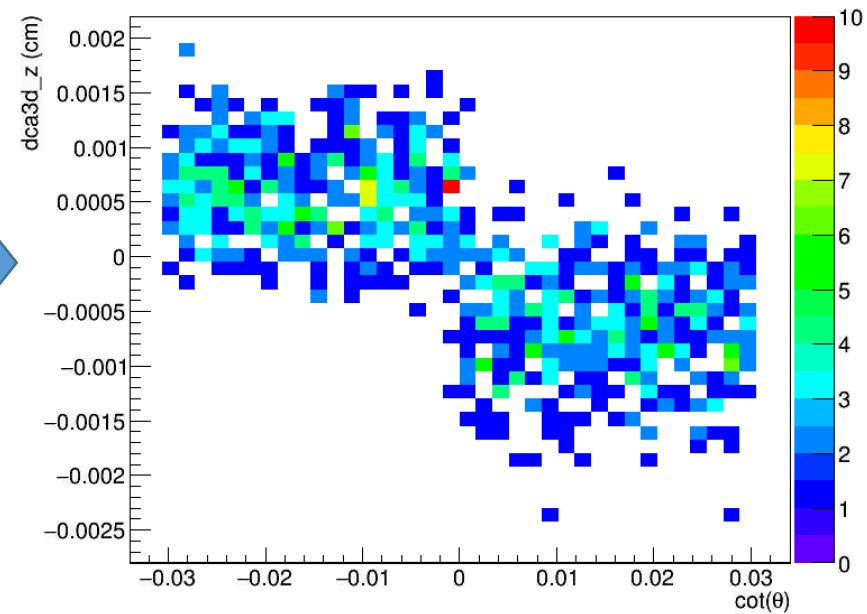


dca3d_z vs. $\cot(\theta)$

$\eta(-0.5,0.5), \phi(-\pi,\pi), \text{vtx}(-0.1,0.1)\text{cm}$



$\eta(-0.03,0.03), \phi(-\pi,\pi), \text{vtx}(-0.1,0.1)\text{cm}$



Backups: